

# PATENT ABSTRACTS OF JAPAN

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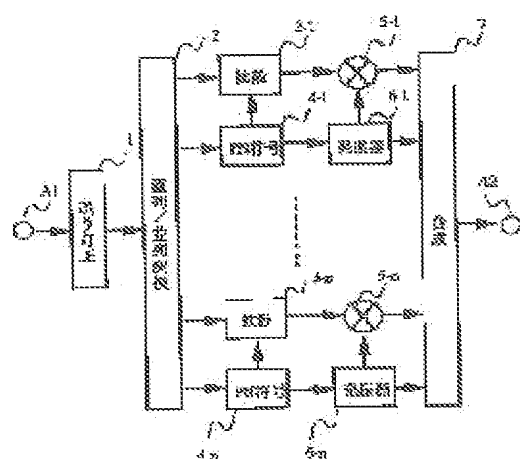
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## (54) MULTI-CARRIER TRANSMITTER AND RECEIVER

### (57)Abstract:

**PURPOSE:** To reduce the effect of fading by adding an error correcting code to input information, distributing the information to each channel, and respectively subjecting each information to spread spectrum, different frequency modulation, synthesis and transmission.

**CONSTITUTION:** An 8-bit signal added to 8-bit input serial information from a terminal A1 by an error correction coding circuit 1 is converted into 1-bit for each channel by a serial/parallel conversion circuit 2. Then spread spectrum devices 3-1 to 3-n apply spread spectrum modulation using BPSK to the resulting signal. Then the data are mixed at an oscillating frequency different by a frequency corresponding to a data speed B, for example, and superimposed on a subcarrier by frequency modulators 6-1 to 6-n. The frequency interval of the



subcarrier is basically made close up to an interval demodulated where each spectrum is not interfered and allocated to a frequency interval corresponding to the data speed B of each subcarrier. Modulated waves are synthesized by a synthesizer 7 and the result is outputted as a synthesis transmission signal.